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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,076	06/01/2001	Robert E. Sobol	10004089-1	3843

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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
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EXAMINER

WILSON, JACQUELINE B

ART UNIT PAPER NUMBER

2612

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/872,076

**Applicant(s)**

SOBOL, ROBERT E.

**Examiner**

Jacqueline Wilson

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the structure of the camera such as the photo sensor, lens, shutter and processor must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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***Claim Objections***

2. Claims 2, 4, 5-7, 9, 13, 15-18, and 20 are objected to because of the following informalities:

Claims 2 and 13, 4 and 15, 5 and 16, 6 and 17, 7 and 18, and 9 and 20 are synonymous such that the claimed limitations are the same. In this aspect, the same limitations are being claimed twice.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 3, 10, and 14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for measuring the motion blur in an image and maximizing the shutter speed when the motion blur exceeds a predetermined amount, does not reasonably provide enablement for preventing the shutter speed from increasing when an aperture is already open at its maximum size. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The specification fails to provide explanation of the advantages of not increasing the shutter speed when the aperture is open at its maximum size. A proper search requires

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understanding of the invention, and in this case, it is unclear as to the purpose of this limitation. No art rejection is supplied.

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 7-9, 11-13, and 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Buckler et al (US 5,030,984).

Regarding Claim 1, Buckler et al teaches a method of adjusting the shutter speed of a digital camera comprising measuring the motion blur in an image by capturing at least two sequential images and comparing the signals (col. 3, lines 60+), and maximizing the shutter speed when the motion blur exceeds a predetermined amount (col. 3, lines 37+).

Regarding Claim 2, Buckler et al teaches capturing at least two frames (col. 3, lines 61+), and comparing at least two frames to determine the amount of motion blur in the image (col. 3, lines 61- col. 4, line 9).

Regarding Claim 7, Buckler et al teaches capturing the two frames immediately before the final image is captured (inherent since the capturing and determination are performed before storing the image on element 32).

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Regarding Claim 8, Buckler et al teaches a photo sensor (16, 32; see also col. 5, lines 11-14 which indicates that a CCD could also be used), a lens (14), a shutter (36) with an adjustable speed (via 34) that controls the length of time the photo sensor sees the image, and a processor configured to measure the amount of motion blur in the image (elements 18, 20, 22, 24, 26, 50, and 34), the processor configured to measure the speed of the shutter when the motion blur exceeds a predetermined amount (col. 3, lines 37+).

Regarding Claim 9, Buckler et al teaches a processor configured to capture at least two frames from the photo sensor and compare at least two frames to determine the amount of motion blur between the two frames (col. 3, lines 60- col. 4, line 10).

Claim 11 is analyzed and discussed with respect to Claim 8. (See rejection of Claim 8 above.)

Claim 12 is analyzed and discussed with respect to Claim 1. (See rejection of Claim 1 above.)

Claim 13 is analyzed and discussed with respect to Claim 2. (See rejection of Claim 3 above.)

Claim 18 is analyzed and discussed with respect to Claim 7. (See rejection of Claim 7 above.)

Claim 19 is analyzed and discussed with respect to Claim 8. (See rejection of Claim 8 above.)

Claim 20 is analyzed and discussed with respect to Claim 9. (See rejection of Claim 9 above.)

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckler et al in view of Anil K. Jain.

Regarding Claim 4, Buckler et al fails to specifically teach comparing two frames using the absolute value of the difference between the corresponding pixels from the two frames. However Anil K. Jain teaches in "Fundamentals of Digital Image-Processing" that the subtraction method may be used to determine motion (see p. 400). Jain teaches that by obtaining the average difference of the image frames, the motion of a scene can be determined (in which a large average difference indicates motion). One having ordinary skill would recognize this teaching as an alternate method of determining blur in images. Therefore, it would have been obvious to one having ordinary skill in the art to use the absolute value of the difference between the corresponding pixels from the two frames.

Claim 15 is analyzed and discussed with respect to Claim 4. (See rejection of Claim 4 above)

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5. Claims 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckler et al in view of Beausoleil, Jr. et al. (US 6,195,475).

Regarding Claim 5, Buckler et al teaches comparing two frames and determining the displacement of the images for the purpose of realizing blur in the image. However, Buckler et al fails to teach using a general two-dimensional Taylor series expansion. However Beausoleil, Jr. et al teaches the correlation between two images is measured using a general two-dimensional Taylor series expansion (see abstract). This method is a way to determine motion of the camera by calculating the correlation between two successive frames. One having ordinary skill would recognize this teaching as an alternate method of determining blur in images. Therefore, it would have been obvious to one having ordinary skill in the art to use a general two-dimensional Taylor series expansion in Buckler et al for the purpose of determining the amount of blur in the image.

Claim 16 is analyzed and discussed with respect to Claim 5. (See rejection of Claim 5 above.)

6. Claims 6 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckler et al in view of John C. Russ article "Template Matching and Correlation".

Regarding Claim 6, Buckler et al teaches comparing two frames, but fails to specifically disclose the method of using template matching. However, John C. Russ teaches that template matching is notoriously well known in the art. Russ specifically teaches that an estimate of motion in a scene is determined by using multiple images to



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locate features within images (P. 365, first and second paragraphs). This provides information of blurring in images. One having ordinary skill would recognize this teaching as an alternate method of determining blur in images. Therefore, it would have been obvious to one having ordinary skill in the art to use template matching in Buckler et al to determine that amount of motion blur of an image.

Claim 17 is analyzed and discussed with respect to Claim 6. (See rejection of Claim 6 above.)

### ***Conclusion***

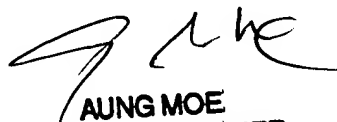
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacqueline Wilson whose telephone number is (703) 308-5080. The examiner can normally be reached on 8:30am-5:00pm (alternate Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JBW  
07/29/04

  
AUNG MOE  
PRIMARY EXAMINER